



Math Games & Centers in Afterschool

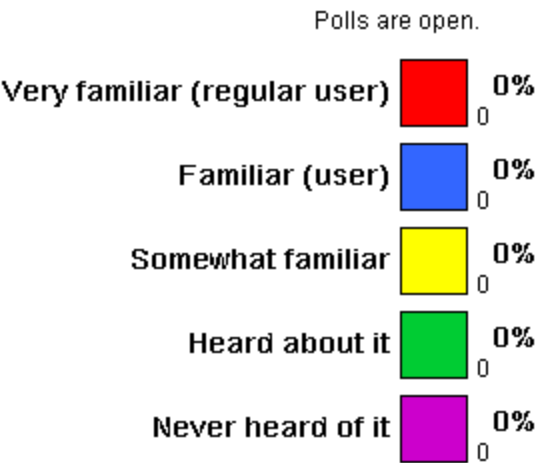
Patricia McClure, Ed.D.
February 15, 2007

SERVE Center
at the University of North Carolina
at Greensboro

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Slide 1

Indicate your familiarity with the NPQAL Afterschool Toolkit



Poll 1 NPQAL Afterschool Toolkit



What part of the toolkit have you used? How have you used it?

printed off games to use in the afterschool program

watched videos

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What part of the toolkit have you used? How have you used it?



Presentation Overview

- Introduce NPQAL Mathematics Resources
<http://www.sedl.org/afterschool/toolkits/math/>
- Discuss Rationale for Math Games
- Review of Negative & Positive Integers
- Play Sample Online Game—24game® Integers
- Play Number Wizards
- Reflect and Plan Next Steps

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Presentation Overview



Outcomes

Participants will ...

- ➡ ■ Learn more about NPQAL Afterschool Toolkit
 - Explore math tools and promising practices - **math games and** math centers
 - Think about ways that the NPQAL math tools can be used as staff development
 - Explore other standards-based math games, **resources**, and tips and strategies
 - Begin plans to incorporate new math games in their AS programs

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Outcomes



NPQAL Afterschool Toolkit Available at:

www.sedl.org/afterschool/toolkits

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NPQAL Afterschool Toolkit Available at:

www.sedl.org/afterschool/toolkits

A Sharing Slide

SEDL | Afterschool Training Toolkit - Netscape Browser - Patricia



Questions?

➡ *Is there a charge to use this website?*

What grades are included?

Does the website give us lessons?

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Questions?



Why do math centers and games work?

- ➡ ■ Social interaction
- Immediate feedback



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Why do math centers and games work?



Why do math games and centers work?

- Structured play
- Differentiated, informal instruction
- Choice
- High concentration



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Why do math games and centers work?



What makes math games academic enrichment?

Students:

- Engage in mathematical thinking;
- Have mathematical conversations;
- Gain fluency; and
- Develop problem solving strategies.

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What makes math games academic enrichment?



Math games and centers can be ...

- ✕ ▪ Competitive
- ✕ ▪ Cooperative
- ✕ ▪ Whole group
- ✕ ▪ Small group
- ✕ ▪ Individual

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Math games and centers can be ...



When selecting math games & activities,
be strategic:

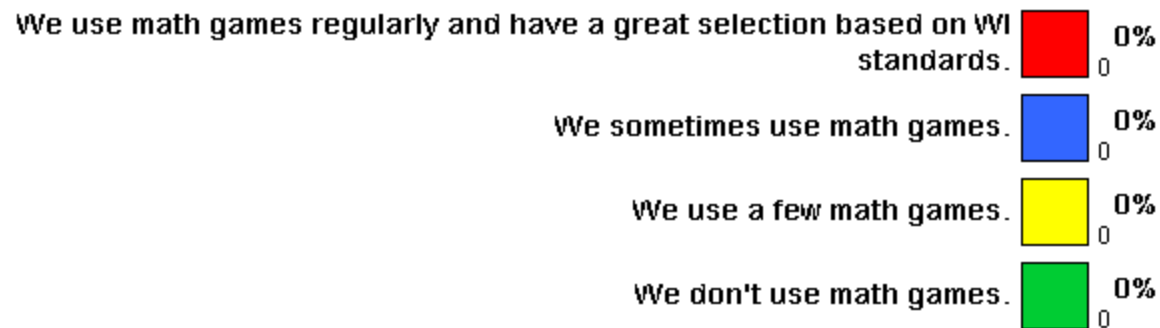
- Target particular strategies and skills,
- ✓ ▪ Monitor for appropriateness, and
- Tap students' interests.

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When selecting math games & activities, be strategic:

To what extent do you use math games for academic enrichment?

Polls are closed.



POLL 2



24® Math Games

- Standards-based
- Skill-based
- Grade-level appropriate
- Linked to the school day

24 Game® card sets are published by Suntex International, Inc.: www.24game.com

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24® Math Games



24® Math Games

- Add/Subtract Primer (Ages 7 & Up)
- Multiply/Divide Primer (Ages 8 & Up)
- Factors/Multiples (Ages 9 & Up)
- Single Digits (Ages 9 & Up)
- Variables (Ages 9 & Up)
- Double Digits (Ages 10 & Up)
 - Fractions/Decimals (Ages 11 & Up)
- Integers (Ages 12 & Up)
 - Algebra/Exponents (Ages 12 & Up)

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24® Math Games



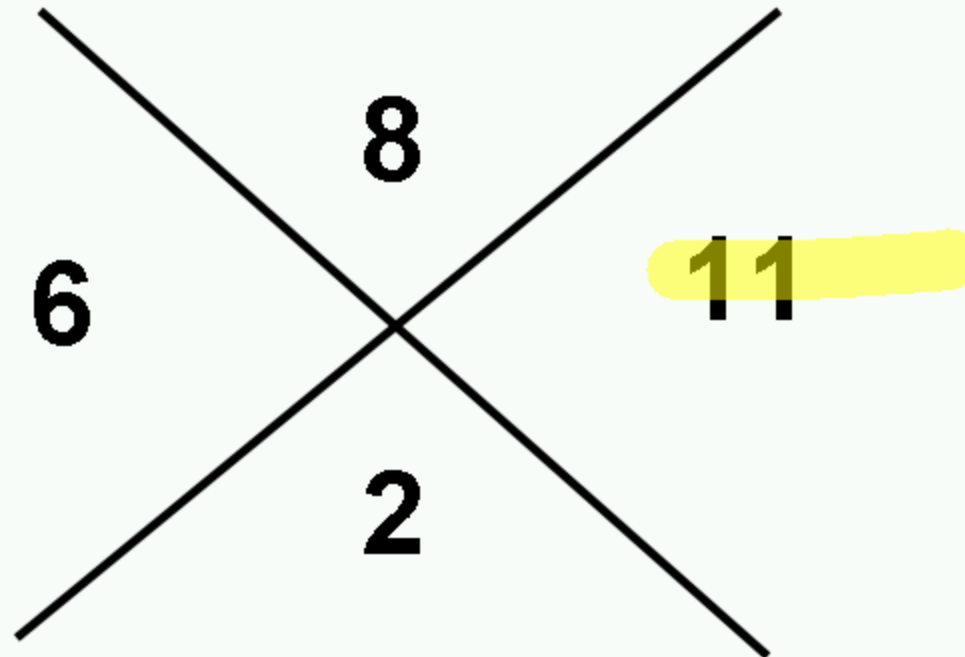
Playing 24 Game® Double Digits and 24 Game® Integers

*24 Game® card sets are published by Suntex International, Inc.,
available at www.24game.com*

\$21/set

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Playing 24 Game® Double Digits and 24 Game® Integers



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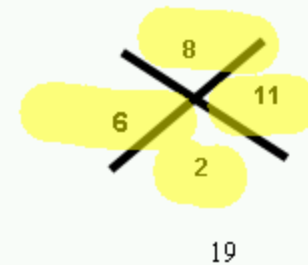
Slide 18



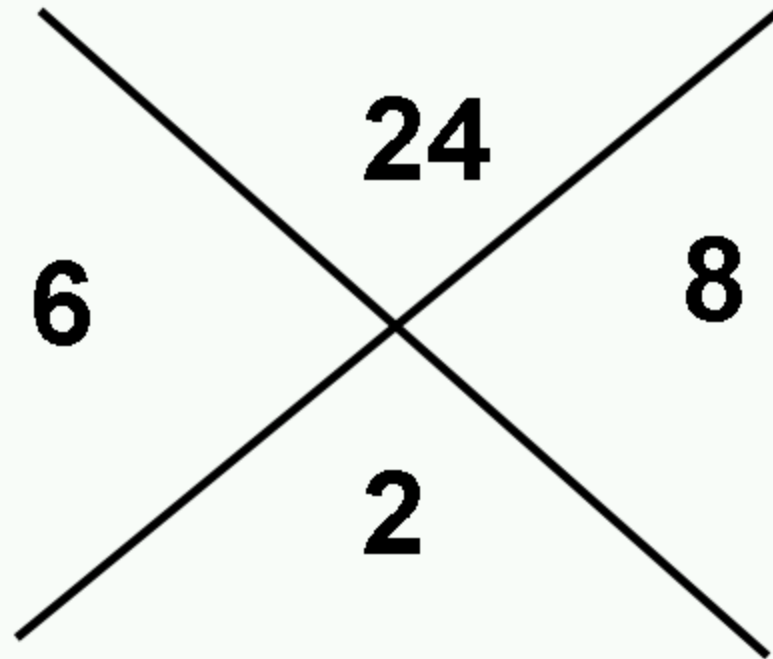
$$11 \times 2 = 22$$

$$22 - 6 = 16$$

$$8 + 16 = 24$$



$$11 \times 2 = 22 \quad 22 - 6 = 16 \quad 8 + 16 = 24$$



24game ® Double Digits (Ages 10 & Up)

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$$8-6=2$$

2 divided by 2=1

$$24 \times 1 = 24$$

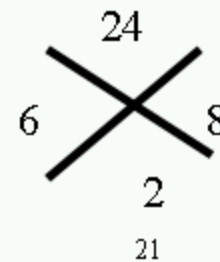
$$8-6=2 \quad 2/2=1 \times 24=24$$

$$8-6=2$$

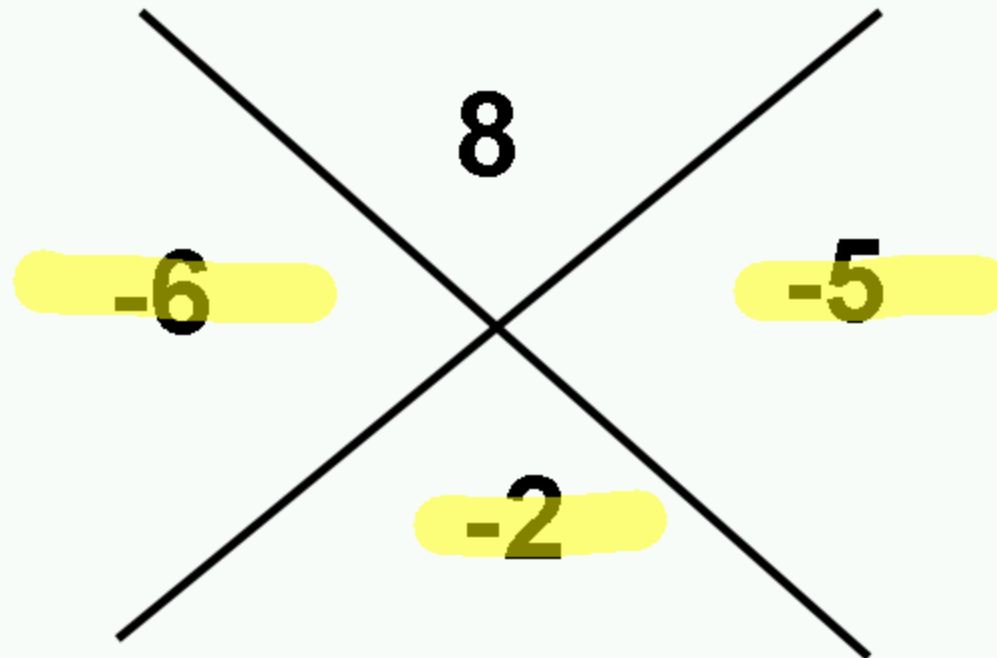
$$2 \times 6 = 12$$

$$12 \times 2 = 24$$

$$2+6=8 \quad 8-8=0 \quad 0+24=24$$



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24game ® Integers (Ages 12 & Up)

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Slide 22



Adding Negative & Positive Integers

- Adding negative integers

$$(-14) + (-12) = - (14 + 12) = -26$$

- Adding negative and positive integers

$$-3 + 1 = |3| - |1| = -2$$

$$11 + (-2) = |11| - |2| = 9$$

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Adding Negative & Positive Integers



Subtracting Negative Integers

$$18 - 9 = 18 + (-9) = 9$$

$$18 - (-9) = 18 + 9 = 27$$

$$-30 - (39) = -30 + (-39) = -69$$

$$-30 - (-39) = -30 + (39) = 9$$

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Subtracting Negative Integers



Multiplying and Dividing Negative & Positive Integers

- Same sign; positive answer

$$3 * 2 = 6$$

$$6 / 2 = 3$$

$$-3 * -2 = 6$$

$$-6 / -2 = 3$$

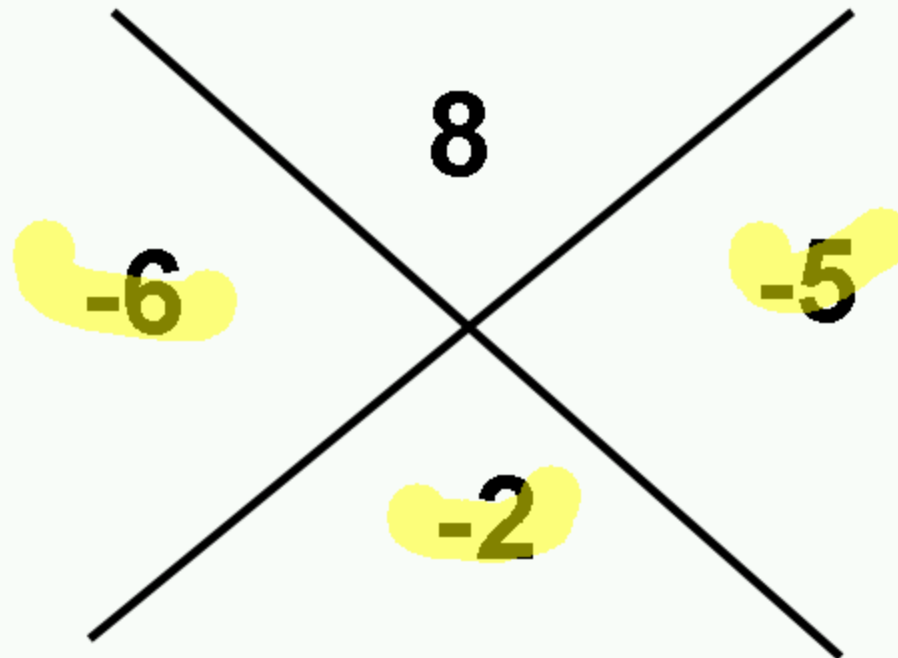
- Different signs; negative answer

$$-3 * 2 = -6$$

$$-6 / 2 = -3$$

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Multiplying and Dividing Negative & Positive Integers



24game ® Integers (Ages 12 & Up)

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$$8 - (-6) = 14 \quad (-2) * (-5) = 10 \quad 10 + 14 = 24$$

A math problem is shown with a large 'X' drawn over it, indicating it is incorrect. The problem is $8 - 6 - 5 - 2$. Below the problem, the number 27 is written.

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Number Wizards



Each player draws or is given a game board as shown:



Each player writes the number (0 to 9) that comes up in a 10-sided die roll, on a card draw, or in a spin in one space on his or her game board. Once the digit is written, it cannot be moved. The winner creates the greatest number or the least number as pre-instructed.

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Number Wizards



Number Wizards

Volunteer 1

Julie

8 8 7 6 5 4 6 2 4 0

Volunteer 2

Nancy

8 7 5 8 6 4 2 0

Volunteer 3

Tina

8 7 8 4 6 6 5 4 2 0

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Number Wizards



Number Wizards



An online version of Number Wizards is available at:

<http://z.cs.utexas.edu/users/s2s/latest/number1b/>

But I lost!

Dr Maggie Myers

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Number Wizards



To maximize the math learning ...

- Plan based on identified student needs and WI standards
- Select "good" math activities, puzzles, and games
- Share

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To maximize the math learning ...



When planning, consider ...

- ✓ ■ Academic needs
- ✓ ■ Age- & ability-appropriate activities, games
- ■ Timing
 - Set-up
 - Grouping
 - Assessment/record keeping



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When planning, consider ...



Ongoing Assessment/Evaluation

- Listen for understanding
- Look for engagement that reflects skill appropriateness
- Ask open-ended questions
- Collect evidence of success that reflects skill, concept development
- Give genuine praise

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Ongoing Assessment/Evaluation



Reflection, Questions, and Answers

What questions do you have?

www.24games.com

What are your next steps?

Yes, I like the math games.

Use the text tool or just jump in

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Reflection, Questions, and Answers



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Remember to Visit the Online
NPQAL Afterschool Toolkit at:

<http://www.sedl.org/afterschool/toolkits>

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Contact Information

Patricia McClure, Ed.D.
SERVE Center at UNCG
PO Box 5367
Greensboro, NC 27435

800-755-3277
pmcclure@serve.org

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Contact Information